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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LIGHTFOOT, ELENA TSOY	

ART UNIT	PAPER NUMBER
1792	

NOTIFICATION DATE	DELIVERY MODE
09/16/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@mwzb.com

Office Action Summary	Application No.	Applicant(s)	
	10/516,610	PASQUIER ET AL.	
	Examiner	Art Unit	
	Elena Tsoy Lightfoot	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-37 and 39-43* is/are pending in the application.

4a) Of the above claim(s) *7,11,20,30-37 and 39-41* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-6,8-10,12-19,21-29,42 and 43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 December 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

Amendment filed on May 12, 2009 has been entered. Claim 3 and 38 have been cancelled. New claims 42-43 have been added. Claims 1, 2, 4-37, and 39-43 are pending in the application. Claims 7, 11, 20, 30-37, and 39-41 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claims examined on the merits are 1, 2, 4-6, 8-10, 12-19, 21-29, 42, and 43.

Claim Objections

Objection to claim 1 because of the informalities has been withdrawn due to amendment.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Rejection of claims 1-6, 8-10, 12-19 and 21-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement has been withdrawn due to Applicants' explanation.

3. Claims 1-6, 8-10, 12-19 and 21-29 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling has been withdrawn due to Applicants' explanation.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Rejection of claims 1-6, 8-10, 12-19 and 21-29 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention has been withdrawn due to amendment.

Examiner Note

All art based rejections have been withdrawn due to amendment. The new grounds of rejections are as follows:

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1, 2, 4, 5, 8, 12, 14, 19, 21, 22, 24-26, 28, 42, 43 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Pause (US 7488773).

Pause discloses a method for thermal insulation of cables or thermal protection of technical products (See column 3, lines 26-28) using a silicone rubber matrix containing finely-divided phase change materials such as crystalline alkyl hydrocarbons emulsified or dispersed in a cross-linked silicon rubber structure (See column 3, lines 16-26). The silicone rubber matrix is formed by mixing the phase change material (available in a liquid form after melting) such as $C_{16}H_{34}$ - $C_{21}H_{44}$ paraffinic cut (See Table 1column 2, lines 15-24) into a liquid silicone rubber that is *paste*-like flowable *addition curing* two-component blend (as required by claim 12) (See column 3, lines 44-53; column 4, lines 41-42) comprising e.g. hydrogen-functional polysiloxane cross-linking agent (as required by claim 8) (See column 5, lines 45-47) and a platinum catalyst (as required by claim 14) (See column 3, lines 59-62), coated immediately onto a metal or plastic substrate (See column 4, lines 48-51), and cured in situ (See column 6, lines 52-54) at room temperature or at a higher temperature of up to 75^0C (See column 4, lines 39-43).

As to claim 12, the Examiner takes official notice that it is a common knowledge in the art to use a hydrosilylation catalyst such as platinum based catalyst for carrying out the addition reaction between polysiloxane having Si-H group and vinyl-polysiloxane.

As to claim 19, the Examiner takes official notice that it is a common knowledge in the art that crude petroleum residues or distillates contain paraffinic hydrocarbons and oleflnic, naphthenic and/or aromatic compounds*. Therefore, C_{16}-C_{21} hydrocarbon byproducts of petroleum refining of Pause contain olefinic, naphthenic and/or aromatic compounds which have boiling point close to boiling point of C_{16}-C_{21} hydrocarbon, i.e. would include C_{18} olefins (claimed compatibilizing agent).

As to claim 22, in order to obtain a certain appearance, *color pigments* will be added. Otherwise the end product will be vary between transparent and opaque. See column 4, lines 24-25.

As to claims 24-26 and 43, the recitation "for insulating a flowline or a pipeline or singularity thereon" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

9. Claims 6, 9, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pause '773, as applied above, and further in view of Salyer (US 5,053,446).

Pause teaches a process for producing a silicone rubber material containing finely divided phase change materials, which absorb, store and release large quantities of heat during a phase transition, leads to a thermo-regulating effect. This thermo-regulating effect can be used to enhance the thermal performance characteristics and the thermal comfort sensation of a variety of products such as sport garments, diving suits, protective garments, blinds, building materials, medical products, automotive products, etc. See column 1, lines 19-31. More than 500 natural and synthetic phase change materials, which differ from one another in their phase change temperature ranges and their heat storage capacities are known (See column 1, lines 60-63). **U.S. Pat. No. 5,053,446** (to Salyer) reports a polyolefin matrix containing a phase change material and possesses enhanced thermal storage properties (See column 3, lines 1-10). However,

applications of these containment structures have shown that they are not providing a durable containment and the phase change material often disappears while in its liquid stage (See column 3, lines 11-14). Pause teaches that advantageously silicone rubber materials may be used may be as a matrix for finely divided phase change materials such as crystalline alkyl hydrocarbons or salt hydrates (See column 3, lines 18-20).

Pause further teaches that in principle, **all** phase change materials with phase transition temperatures in the required temperature ranges, e.g. in the range of 20^0C-100^0C depending on application can be used for incorporation into the silicone rubber matrix (See column 3, line 65 to column 4, line 8). Pause fails to teach that phase change materials include slightly branched alkyl chain alkylaromatics or alkylcycloalkanes, fatty alcohols and fatty acids.

U.S. Pat. No. 5,053,446 to Salyer teaches that crystalline organic compounds such as crystalline alkyl hydrocarbons, crystalline **fatty acids**, crystalline fatty acid esters, crystalline alicyclic hydrocarbons, and crystalline aromatic hydrocarbons which melt and freeze within the desired thermal transfer temperature range (e.g., 0 to 80^0C) (See column 9, lines 12-23) may be used in an amount of 40-80 wt% (See column 8, lines 64-67) as phase change materials in **crosslinked** polyolefin matrix (See column 2, lines 35-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used crystalline fatty acids in Pause instead of crystalline alkyl hydrocarbons since Salyer teaches that crystalline organic compounds such as crystalline alkyl hydrocarbons, crystalline **fatty acids**, crystalline fatty acid esters, crystalline alicyclic hydrocarbons, and crystalline aromatic hydrocarbons as phase change materials in a **crosslinked** polymer matrix.

As to claimed concentration limitations, Pause teaches that the crystalline alkyl hydrocarbons may be incorporated into the silicone rubber matrix in a weight portion of up to 60 wt. % based on the material's total weight. These quantities of phase change material ensure a substantial increase in thermal performance, and on the other side, the desired mechanical strength, flexibility and hardness characteristics of the silicone rubber material can also be maintained. See column 4, lines 9-19. Thus, the amount of phase change materials depend on desired thermal performance (i.e. the amount and *nature* of phase change materials) and mechanical strength of a matrix.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant concentration parameters of phase change materials (including those of claimed invention) in Pause in view of Salyer depending on desired thermal performance (i.e. the amount and *nature* of phase change materials) and mechanical strength of a matrix.

Moreover, it is well settled that concentration limitations are obvious absent a showing of criticality. Akzo v. E.I. du Pont de Nemours 1 USPQ 2d 1704 (Fed. Cir. 1987).

10. Claims 13, 15, 16, 18, 19, 24-26, 28, 29, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pause '773.

As to claimed concentration limitations, it is held that concentration limitations are obvious absent a showing of criticality. Akzo v. E.I. du Pont de Nemours 1 USPQ 2d 1704 (Fed. Cir. 1987).

As to claims 24-26 and 43, the recitation "for insulating a flowline or a pipeline or singularity thereon" has not been given patentable weight because the recitation occurs in the

preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

As to claims 28-29, a singularity on a flowline or pipeline limitations of the claims are not addressed because the singularity is *optional*.

11. Claims 10, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pause '773, as applied above, further in view of Buckingham et al (US 20030082129).

Pause '773 fails to teach the use of compatibilizing agent.

However, it is well known in the art to use a compatibilizing agent to homogenize a mixture of components that are immiscible with each other, as evidenced by Buckingham et al (See P46). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a compatibilizing agent in a gellable composition of Pause '773 in case of poor compatibility of components with the expectation of providing the desired homogeneous mixture of components.

12. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pause '773, as applied above, further in view of Hupfield (US 7019098).

Pause '773 fails to teach that antibacterial agents are added to an insulating composition.

Hupfield teaches that antibacterial agents such as chlorohexadiene gluconate and antifungal agents such as miconazole nitrate (See column 5, lines 66-67) may be added to a composition for insulation materials for electric cables (See column 6, lines 25-26). Therefore, it

would have been obvious to one of ordinary skill in the art at the time the invention was made to have added antibacterial agents to an insulating composition of Pause '773.

13. Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pause '773, as applied above, further in view of Craubner (US 4348243).

Pause '773 fails to teach that antibacterial agents and hollow glass microspheres are added to an insulating composition.

Craubner teaches that an insulating composition may contain *biocides* (See column 3, line 8) and *hollow glass microspheres* to provide thermal and flame resistance (See column 2, lines 32-39). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added antibacterial agents and hollow glass microspheres to an insulating composition of Pause '773 with the expectation of providing the desired antibacterial properties and thermal and flame resistance, as taught by Craubner.

14. Claims 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pause '773, as applied above, further in view of Vergouw (US 4941773).

Pause '773 fails to teach that: a flowline or a pipeline or a singularity on a flowline or pipeline is insulated (Claim 24, 26, 28) using an external jacket (Claim 27).

As to claim 24-27, Vergouw teaches that power cables may be thermally insulated by placing the power cables into pipeline 4 that together with other pipelines 2 and 3 for e.g. oil or gas are placed into a carrier pipe 1 (claimed external jacket), lowering the carrier pipe to the seabed (See column 3, lines 60-63), filling the space around the lines 2-4 with an insulation composition by varying pressure (See column 4, lines 39-40), and gelling the composition (See FIGS. 1 and 2; column 2, lines 53-64; column 4, lines 3-12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have thermally insulated electric cables of the cited prior art by placing them into a carrier pipe together with other pipelines to be insulated, lowering the carrier pipe to the seabed, filling the carrier pipe with an insulation composition by varying pressure, and gelling the composition, as taught by Vergouw.

As to claims 28-29, a singularity on a flowline or pipeline limitations of the claims are not addressed because the singularity is *optional*.

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

* US 2,120,209 to Bray is cited to show that crude petroleum residues or distillates contain paraffinic hydrocarbons and oleflnic, naphthenic and/or aromatic compounds (See page 1, column 2, lines 19-23).

Response to Arguments

16. Applicant's arguments with respect to claims 1, 2, 4-6, 8-10, 12-19, 21-29, 42, and 43 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy Lightfoot whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Friday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy Lightfoot, Ph.D.
Primary Examiner
Art Unit 1792

September 14, 2009

/Elena Tsoy Lightfoot/